4. (Not Amended) The recording medium according to Claim 1, which has a porous layer on the ink-receiving layer.

5. (Not Amended) The recording medium according to Claim 4 wherein the porous layer comprises silica.

REMARKS

Claims 6-8 having been withdrawn from consideration, Claims 1-5 are now presented for examination. Claim 1 has been amended to define still more clearly what Applicants regard as their invention, in terms which distinguish over the art of record. Claim 1 is the only independent claim.

Claims 1-3 have been rejected under 35 U.S.C. § 103(a) as unpatentable over European Patents EP 709,222 (Yoshino et al.) and EP 701,904 (Eguchi). With regard to the claims as amended by this amendment, this rejection is respectfully traversed.

Independent Claim 1 as amended by this amendment is directed to a recording medium having an ink-receiving layer provided on a substrate. The ink-receiving layer includes an alumina hydrate having a boehmite structure, an average particle thickness of 2.0-6.0 nm and a crystalline size of 5.0 to 8.0 nm in the direction of a (020) plane. The crystalline size is greater than the average particle size and the recording medium has a degree of parallelization of 30 to 1000.

The added feature of Claim 1 as amended by this amendment of crystalline size being greater than the average particle thickness is disclosed at lines 12-15 of page 12 in the specification. No new matter is believed to have been added.

In Applicants' view, Yoshino et al. discloses a recording medium having a base layer and an ink-receiving layer formed on the base layer and containing alumina hydrate of a boehmite structure or of a fibrous material and alumina hydrate of a boehimite structure incorporated therein. The alumina hydrate in the ink-receiving layer or the fibrous material has an interplanar spacing of (020) plane of exceeding 0.617 nm but not more than 0.620 nm, and crystalline size in a direction perpendicular to (010) plane ranging from 6.0 to 10.0 nm.

In Applicants' opinion, Eguchi et al. discloses a recording medium having a porous ink-receiving layer containing alumina hydrate of boehmite structure formed on a base material. The alumina hydrate has crystallinity ranging from 15 to 80 and microcrystals of the alumina hydrate are directed to be parallel in a plane direction of the ink-receiving layer at a parallelization degree of not less than 1.5. The recording medium is employed in an ink-jet recording method of printing by ejecting ink droplets through an orifice onto a record medium as the recording medium. In producing the recording medium, a coating liquid containing alumina hydrate of boehmite structure with shearing stress is applied onto a base material. The coated material is dried to obtain a degree of parallelization of a microcrystal of the alumina hydrate with a plane direction of the ink-receiving layer of not less than 1.5.

The present invention employs alumina hydrate having a very high orientation. As disclosed at lines 20-24 of page 7 in the specification, the addition of a binder to the high orientation alumina hydrate forms an ink-receiving layer that is substantially improved in resistance to curling before and after printing. It is one feature of Claim 1 that the recording medium has a degree of parallelization of 30 to 1000. As disclosed at lines 10-16 of page 13 in the specification, the degree of parallelization prevents the occurrence of coating defects and curling before and after printing. It is an additional feature Claim 1 that the crystalline size is greater than the average particle thickness which results in prevention of bleeding and cissing.

Yoshino et al. may teach that crystallite size in a direction perpendicular to (010) plane in a recording medium ranges from 6.0 to 10.0 nm and an aspect ratio of from 3 to 30 but is devoid of any disclosure of "a degree of parallelization" which corresponds to the intensity ratio for the medium divided by the intensity ratio for the powder or any suggestion of a degree of parallelization of 30 to 1000 as in Claim 1. Further, Yoshino et al. fails in any manner to teach or suggest the feature of crystalline size being greater than the average particle thickness as in Claim 1.

Eguchi et al. may teach a degree of parallelization of 1.5 or more. As clearly indicated in tables 4, 5 and 8 of Eguchi, the recording media in the examples of Eguchi et al. all are limited to a degree of parallelization of four or less. Neither does Eguchi et al. in any manner suggest the feature of Claim 1 of crystalline size being greater than the average particle thickness. Accordingly, it is not seen that Eguchi et al. teaches or

suggests the feature of Claim 1 of a degree of parallelization of 30 to 1000 combined with the feature of crystalline size being greater than the average particle thickness.

With regard to any combination of Yoshino et al. and Eguchi et al., it is not seen that the addition of Eguchi et al.'s degree of parallelization of 1.5 to 4 to Yoshino et al.'s crystallite size in a direction perpendicular to (010) plane in a recording medium ranges from 6.0 to 10.0 nm and an aspect ratio of from 3 to 30 could possibly suggest the degree of parallelization of 30 to 1000 in combination with crystalline size being greater than the average particle thickness as in Claim 1. It is therefore believed that Claim 1 as amended by this amendment is completely distinguished from Yoshino et al. and Eguchi et al. taken alone or in combination is allowable thereover.

Claims 1, 4 and 5 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshino et al. and Eguchi et al. as applied to Claim 1 and further in view of U.S. Patent 5,104,730(Misuda et al.) or the admissions on page 4 of the specification. With regard to the claims as amended by this amendment, this rejection is respectfully traversed.

Misuda et al., in Applicants' view, discloses a recording sheet having a substrate and a porous layer of ink absorbent formed thereon. The porous layer of ink absorbent is made mainly of pseudo-boehmite. Applicants disclose at lines 4-11 of page 4 that Japanese Patent Application Laid-open No. 7-76162 discloses prevention of scratch marking by providing a silica layer.

Claim 1 as amended by this amendment does not include any limitation as to a porous layer. As aforementioned with respect to Yoshino et al. and Eguchi et al., it is not

seen that any combination of these references suggests the feature of Claim 1 of the degree of parallelization of 30 to 1000 in combination with the feature of crystalline size being greater than the average particle thickness as in Claim 1. Claim 1 is therefore believed to be allowable and Claims 4 and 5 depending from Claim 1 are also believed to be allowable.

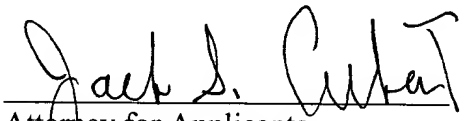
A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claim herein. That is therefore believed patentable over the art of record.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' attorney, Jean K. Dudek, may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Three Times Amended) A recording medium comprising a substrate and an ink-receiving layer provided on the substrate, wherein the ink receiving layer comprises an alumina hydrate having a boehmite structure, an average particle thickness of 2.0 to 6.0 nm and a crystalline size of 5.0 to 8.0 nm in a direction of a (020) plane, the crystalline size being greater than the average particle thickness, and the recording medium has a degree of parallelization of 30 to 1,000.